

## WHAT WE CLAIM IS:

1. A powered unicycle including:

a wheel driven by a motor;

5 a control system arranged to automatically maintain the fore-aft balance of the unicycle via operation of the motor;

a handlebar, coupled to the wheel by a pillar, which is operable to steer the wheel; and

a rider-support which supports a rider, and which is pivotable relative to the

10 wheel.

2. A powered unicycle according to claim 1, wherein the rider-support is mounted to the pillar by a pivotal connection.

15 3. A powered unicycle according to claim 2, wherein the pivotal connection is configured to resiliently urge the rider support toward a central position relative to the wheel.

20 4. A powered unicycle according to claim 3, wherein the pivotal connection includes a bush formed from resilient material located about a lower portion of the pillar and a sleeve coupled to the rider-support which surrounds the bush.

25 5. A powered unicycle according to claim 2, wherein the pivotal connection includes a spring mechanism arranged to urge the rider-support toward a central position relative to the wheel.

6. A powered unicycle according to claim 5, wherein the spring mechanism includes two arms fixed relative to either the pillar or the rider-support and against which springs operate to urge the rider-support toward said central position.

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7. A powered unicycle according to any one of the preceding claims, wherein the rider-support is a standing platform upon which the rider may stand.

8. A powered unicycle according to any one of claims 1-6, wherein the rider-support includes a seat upon which the rider may sit.

5 9. A powered unicycle according to claim 8, wherein the rider-support further includes a foot platform upon which the rider may place their feet while sitting on the seat.

10. A powered unicycle according to claim 1, wherein the rider-support is a seat, mounted to the pillar by a seat post, the seat being pivotal upon the seat post.

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11. A powered unicycle according to claim 1, wherein unicycle includes two rider-supports, each being a foot pad pivotally mounted on a standing platform which is rigidly mounted to the pillar.

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12. A powered unicycle according to claim 11, wherein the foot pads are biased toward a central position relative to the wheel.

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13. A powered unicycle according to any one of the preceding claims, wherein the control system has one or more associated sensors arranged to detect whether the pillar and wheel are aligned with the local gravitational and inertial force field.

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14. A powered unicycle according to claim 13, wherein the control system is arranged to operate the motor to accelerate the wheel when it is detected as behind the field and to decelerate the wheel when it is detected as ahead of the field, to automatically maintain the fore-aft balance of the unicycle.

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15. A powered unicycle including:

a wheel driven by a motor;

a control system arranged to automatically maintain the fore-aft balance of the

unicycle via operation of the motor;

a handlebar, coupled to the wheel by a pillar, which is operable to steer the wheel; and

a standing platform, upon which a rider may stand, which is pivotable relative to the wheel.

16. A powered unicycle according to claim 15, wherein the standing platform is  
5 mounted to the pillar by a pivotal connection.

17. A powered unicycle according to claim 16, wherein the pivotal connection is configured to resiliently urge the standing platform toward a central position relative to the wheel.

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18. A powered unicycle according to claim 16, wherein the pivotal connection includes a spring mechanism arranged to urge the standing platform toward a central position relative to the wheel.

15 19. A powered unicycle including:

a wheel driven by a motor;

a control system arranged to automatically maintain the fore-aft balance of the unicycle via operation of the motor;

20 a handlebar, coupled to the wheel by a pillar, which is operable to steer the wheel;

a platform fixed to the pillar; and

two foot pads pivotally mounted to the platform upon which the rider may stand.

25 20. A powered unicycle according to claim 19, wherein the foot pads are biased toward a central position relative to the wheel.